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ABSTRACT

Data from the 1980 and 1982 High School and Beyond Surveys are used to compare the achievement of immigrant and native students in high school. The study examines effects of generation and duration of residence in the United States on improvement in students' performance on standardized tests over a 2-year period beginning with the year the students were sophomores in high school. The results of the multivariate analyses suggest that even controlling for family background and ethnic group, recent immigrants have the lowest test scores (in 1980). However, when the trajectory of achievement is examined, as measured by increases in test scores between 1980 and 1982, generation status is no longer significant. Thus, the best predictors of achievement during the high school years are not those based on the nativity of the student, but rather those that reflect the social environment experienced in the United States, such as ethnicity, family socioeconomic status, and previous school performance. Recent immigrants, whether or not they are old for their grade, "catch up" with peers of similar age over the 2 years when other background characteristics are controlled. (Contains 5 tables, 4 figures, and 33 references.) (SLD)

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ED 425 207

Generation Status and Achievement in High School

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Abstract:

This paper uses data from 1980 and 1982 High School and Beyond Surveys to compare the achievement of immigrant and native students in high school. We examine the effects of generation and duration of residence in the United States on improvement in students' performance on standardized tests over a two year period beginning with the year they are sophomores in high school. The results of the multivariate analyses suggest that even controlling for family background and ethnic group, recent immigrants have the lowest initial test scores (in 1980). However, when looking at the trajectory of achievement (as measured by increases in test scores between 1980 and 1982), generation status is no longer significant. Thus, the best predictors for achievement during the high school years are not those based on the nativity of the student but rather those that reflect the social environment experienced in the United States such as ethnicity, family socioeconomic status and previous school performance. Further, recent immigrants, whether old for grade or not, "catch up" with similar aged peers over the two years when other background characteristics are controlled.

Generation Status and Achievement in High School

The adaptation of immigrants to the receiving society remains a dominant theme in research on immigration. Policy makers, the public, and immigration scholars voice concerns about the extent to which new arrivals in the United States will succeed at least in comparable measure to their native counterparts. Recent research has turned attention towards the processes through which new arrivals gain access to the resources necessary for achievement in the United States (Fernandez-Kelly and Schauffler, 1994). We, likewise, are interested in the extent to which foreign born and native born youth in the United States acquire the basic skills that are associated with subsequent positive labor market outcomes (Farkas, 1996; Jencks, 1979).

In this paper we compare immigrants with varying lengths of residence in the United States, the second generation, and natives of the third and higher-order generation in an effort to determine the extent to which nativity differences in academic achievement are conditioned by family structure, socioeconomic status, language background and social capital. We are also interested in determining the effect of timing of entry into the United States on academic achievement. We ask whether those immigrants entering the United States as young children face any skill deficits relative to U.S. born children of immigrant parents (second generation) or U.S. born children of native parents.

Our first task is to determine if generation status has a consistent effect on high school students' performance on a standardized academic test once other characteristics are controlled. However, our concern in this paper is not only on the initial academic skills of immigrants compared to their U.S. born counterparts but on the achievement trajectories of these groups as well. If, controlling for those factors known to impede or facilitate academic achievement, recent immigrants demonstrate lower academic achievement over time, we might conclude that foreign birth itself impedes skill acquisition either because the migration experience or the social environment encountered by immigrants in the United States impedes academic achievement. On the other hand, if we find that there are no differences in academic achievement by generation status, it would suggest that immigration itself does not lower the academic achievement of individuals. Such a finding would additionally indicate that social barriers to academic achievement in the United States are based on factors other than place of birth.

Factors Facilitating or Impeding Academic Achievement:

Previous research has identified factors that differentiate immigrant youth from their native counterparts in terms of school achievement. On the one hand, language deficiency, low socioeconomic status and social capital lost through geographic mobility and family disruption may all lower the educational achievement of immigrants. On the other hand, the higher aspirations and involvement of parents and others within immigrant families may promote high achievement (Vernez and Abrahamse, 1996; Rumbaut, 1997; Kao and Tienda, 1995). However, the degree to which immigrant youth have access to higher levels of family support than natives is unclear. In addition, it is likely that immigrants from different sending communities not only have different levels of human and social capital when they enter the United States but face different receptions upon arrival in the United States (Rumbaut, 1997). Immigrants belonging to historically disadvantaged ethnic groups in the United States may not perform as well as those who are identified with more advantaged groups.

In our analysis of academic achievement among those enrolled in school, we take into account the potentially competing influences of nativity, language background, and ethnicity, as well as family structure and size and family socioeconomic status. Previous research on variations in academic achievement points to low family socioeconomic status as a contributor to poor educational outcomes (Mare and Winship, 1988). Much of the differences in the academic achievement of various race and ethnic groups can be explained by family SES and family background characteristics. However, some ethnic and nativity differences remain even in the face of controls for these characteristics (Kao, Tienda and Schneider, 1996; Bankston, Caldas and Zhou, 1997; Portes and MacLeod, 1996).

Understanding the role of nativity on school performance clearly requires an examination of factors other than family socioeconomic status. English-language ability is one such factor linked to achievement in school (Grenier, 1984; White, 1997), yet the relationship between language background and achievement is not so simple or automatic. An analysis of grade point average (GPA) scores for San Diego high school students found that immigrants from non-English backgrounds received higher GPA scores than Anglos and others of similar ethnicity

from English-only backgrounds (Rumbaut, 1995). Since these were not multivariate results, questions about the influence of uncontrolled factors persist. Characteristics such as family background or social capital (e.g. social support for achievement on the part of family members; tutoring within the family unit) come to mind as likely to differentiate some immigrants. More recent multivariate analyses conducted by Rumbaut (1997) suggest that knowledge of English is positively related to test scores when ethnicity, SES and family structure are controlled. However, another study of immigrants' progress in school finds that English spoken at home is not a significant predictor of school completion (Vernez and Abrahamse, 1996).

Limited English proficiency may impact school performance not only directly, by compromising the ability to perform tasks in English but also indirectly, via actions by school systems. Students with poor English language skills may be placed in lower grades than they might ordinarily be placed according to their age or previous educational experience (Suarez-Orozco, 1991; Zsembik and Llanes, 1996). Students who are held back may perform less well on standardized tests than their peers of the same age because they have not been exposed to the same level of educational material. Overall, foreign-born students are more likely to be delayed in grade progression than their U.S. born counterparts (Bean and Tienda, 1987). However, it is not clear if these students achieve apace with their U.S. born peers who are also delayed in grade progression. Rather than include a single continuous measure of age, we identify the students in our sample as being older than the average age found in their current grade level. We then include interaction terms for older students by generation status in order to determine if there are different trajectories for foreign born and U.S. born students who have been held back in school.

Another factor that may contribute to the apparent confusion over the role of language in school achievement is the way language is conceptualized by researchers. Language background is not necessarily a dichotomy between English versus other languages. Many students come from bilingual backgrounds in which they retain the language of their parents' or grandparents' country of origin while also speaking English. This bilingual background may be positively associated with school performance (Rumbaut, 1998). Thus, students coming from monolinguistic backgrounds may not perform as well in school as those coming from homes in which more than one language is spoken. Other work by Kao and Tienda (1995) suggests that

there are disadvantages associated with limited English skills possessed by those in the first generation but, buoyed by the educational motivation of immigrant parents, second-generation adolescents are more likely to succeed in the U.S. school system. Our analyses include measures of the language spoken in the student's home. We identify three types of homes: (1) bilingual homes, (2) homes in which English is the dominant language spoken (reference group), and (3) homes in which a non-English language is the dominant language spoken.

Social capital is also expected to play an important mediating role in the school performance of immigrants and those from the second generation. According to Coleman's (1990) conception of social capital, social relations among parents, teachers, and other key members of a child's social group are fundamental to increasing human capital in the form of skills and achievement. This network of relations provides a web of support for the student. By extension then, deficits suffered by immigrants in the form of poor English language proficiency or unfamiliarity with the receiving community may be mitigated by higher levels of parental support and strong family ties (Hagen, MacMillan and Wheaton, 1996; Sanders and Nee, 1996; Valenzuela and Dornbusch, 1994).

There have been few longitudinal studies that focus on immigrant youths, thus limiting our understanding of how family structure and parental support may influence nativity differences in school performance. One study, using the same data we employ here, reports that family structure and parental expectations have positive effects on high school completion and college attendance (Vernez and Abrahamse, 1996). More recent results from the Children of Immigrants Longitudinal Survey (CILS) indicated that, in selected areas of California and Florida, "the greater the stability of the family, both structurally and emotionally…the greater the educational achievement [of children from immigrant families]." (Rumbaut, 1998; 22). These results appear to hold true even when socioeconomic status is controlled. We include measures of family structure and size as well as two measures of parental involvement. We expect that these factors as well as measures of language background will mediate some of the nativity differences in academic achievement.

Ethnicity is often discussed as a key factor that may contribute to differential educational attainment by recent immigrants and those from the second and third or higher generations.

Historical studies frequently point to ethnic differences in schooling even in the presence of statistical controls (Glenn, 1990; Sassler, 1995). Kao and Tienda (1995) also report significant differences across immigrants from different ethnic groups. If ethnicity serves as a barrier to academic achievement rather than nativity, we would expect nativity differences in academic achievement to decrease when ethnicity is controlled. Ethnic background is linked to educational outcomes both as a basis for discrimination and as a proxy for other, unmeasured traits (Smith and Welch, 1986; Trueba, 1988). Thus, immigrant adaptation may vary according to the amount of discrimination faced by recent immigrants based on their perceived position in the ethnic "hierarchy" of the United States (Portes and Zhou, 1993; Fernandez-Kelly and Schauffler, 1994). In this case, we may also expect differences in the academic achievement of recent immigrants from different race/ethnic groups.

Overall, foreign-born blacks have lower dropout rates than their U.S. born counterparts where the opposite is the case for Hispanics (U.S. Department of Education, 1997). However, these results are somewhat misleading as indicators of educational achievement since many Hispanic immigrants never enroll in school in the United States and yet are captured in the dropout statistics. Our universe consists of those who were enrolled in high school in 1980, which enables us to concentrate on the school success of those with exposure to U.S. schools. We include measures of ethnicity in our models to control for the possibility that ethnic identification and not migration status, per se, results in differential academic achievement. Zsembik and Llanes (1996) contend that some of the apparent confusion over whether Latino educational attainment increases across generations comes from not accounting for ethnic group differences within the "Latino" category. In our analyses, we identify respondents as members of one of seven race/ethnic groups. Unfortunately, while we are able to separately identify students of Cuban, Mexican and Puerto Rican ethnicity, we are not able to separate "Asian" students into their respective country of origin groupings.

In this paper, we examine the academic achievement of a real cohort of students enrolled in high school in 1980 and observe any change in their academic achievement by 1982. We ask if the characteristics discussed above lead to differences in the trajectories of academic achievement among immigrants and U.S. born students. We include the possible effects of

social capital, human capital and ethnicity on the achievement of youth from the first, second and subsequent generations in the United States. We observe the effect of duration of residence in the United States by dividing the immigrant youths into two categories: (1) those who arrived in the United States six or more years prior to 1980 and thus, entered the U.S. educational system at roughly the same time as their native born peers (and whom we term "pre-school immigrants") and (2) those who arrived in the United States within the last six years of the survey, and hence arrived while schooling was underway. We refer to these students as "recent immigrants". In addition, we address the concerns raised by other scholars that recent immigrants are tracked into lower grades or non-academic classes that, in turn, limits their academic achievement. We ask if immigrant students who are older on average than their classmates demonstrate the same academic trajectories as their U.S. born peers of similar ages.

Data and Methods:

Our data come from the first two waves of the High School and Beyond survey (HSB). The survey is representative of students in high school in 1980 and includes a large number of immigrant children and children of immigrants. HSB made special efforts to follow high school dropouts and Hispanic public and private schools were oversampled. The data also contain many measures not available in other sources, including measures of personal attitudes, performance on standardized tests, parental background, family composition and school context. For each student the data contain information on place of birth and length of U.S. residence. Parental birthplace and length of residence are also available. Thus, one can identify the first and second generation. A rough duration measure is available for the first generation allowing us to distinguish between those students who arrived in the United States before they reached school age. The sample for this study includes those individuals interviewed as sophomores in 1980 and re-interviewed in 1982.

We are interested in the question of the academic achievement of recent immigrants when compared to those who came at younger ages, who are members of the second generation or are members of the third or subsequent generation. We have chosen to examine two specific outcomes: *test80*, performance on a standardized test administered in 1980, the year the students

were sophomores in high school, and *test82*, the first follow-up test, which was administered to those who remained in school as well as those who left. We rely on test scores as our indicators of academic performance for several reasons. First, standardized test scores are often used for placing students in special education or accelerated school environments as well as assessing the progress of students in school over time (Gonzalez, et al, 1997). Second, the use of standardized tests administered across schools allows for the comparison of the academic achievement of students from diverse social and educational settings (Bankston and Caldas, 1996). Finally, mathematics and reading ability translate into subsequent labor market outcomes (Farkas, 1996). By relying on the same test administered at two different points in time, we can not only estimate differential performance by generation status at the first point in time but whether there are any additional effects of generation status on academic achievement over time. The sophomore test outcome we can take to be, within the context of the overall model, a statement of initial conditions. We use performance on the test administered in 1982 as an indicator of change in academic achievement conditioned on the initial conditions in 1980.

As noted above, we might expect immigrants to differ in achievement for a variety of reasons and we control for several of these in the models discussed below. However, a more telling test of immigrant vs. native achievement and the influence of language and other related traits can be found in the *gain* in test score over the period from sophomore to senior year. The test administered by the HSB research staff closely paralleled achievement tests of a variety of sorts given to students over the school years. The HSB test was composed of four parts: Reading Comprehension, Vocabulary, and two Mathematics sections. There is reason to suspect that immigrants, particularly those who have spent the least amount of time in the United States, may perform less well on those test components relating to language skills rather than math skills. Therefore, we examine the scores for each component of the exam separately in our initial analyses. The HSB staff derived a composite score from the components, and it is this composite score we use for the majority of our analyses. This test score has been employed widely by those analyzing the HSB data for a variety of purposes. Although it is shorter than some other standardized achievement tests, it seems to have considerable validity and reliability. It might well be the case that any differences between immigrant status groups would be accentuated or

attenuated in different portions of the examination, but we choose the overall score, because that most closely matches general notions of student achievement and testing.

We employ robust regression techniques to estimate the multivariate models for both the starting point (*test80*) and the trajectory (*test82* gain from 1980). We elect robust methods because they are less sensitive to outliers in multivariate space. In this way robust regression provides an attractive alternative to Ordinary Least Squares (OLS), the conventional estimation technique in models of this sort. One needs to remember that OLS is only one algorithm for fitting a line to data. The robust approach (almost always) begins with such an estimate and then iterates to another solution for the coefficients based on reweighting the data. The weights for the data are can be calculated under several criteria, but generally downweight observations that are outliers in the data space. Robust regression is an iterative procedure. We elect the implementation in the STATA package, which first calculates an absolute distance from the OLS regression line and then applies two sets of weights successively until a convergence tolerance is achieved (Stata Corporation, 1997). There are several good treatments of robust regression techniques (Berk, 1990; Ryan, 1997), so we do not give further details here.

Our rationale for using such techniques is based on contemporary concerns for robustness and on our experience with the data. We have every reason to believe that the HSB survey was as carefully conducted and accurate as any contemporary nation-wide survey. At the same time, it is a survey of thousands of adolescents in hundreds of school settings with a panel structure; thus, it is subject to all of the reporting, coding, and processing errors inherent in large data structures. Since some of our key concerns rest on the behavior of individuals with limited US experience, modest socioeconomic backgrounds, and sometimes limited English proficiency, we felt that a robust view was best. Another concern was the presence of apparent outliers, detected in income data from HSB [White 1997], a variable not in use here. Fortunately the key outcome variables, *test80* and *test82*, are carefully constructed indices that are nearly normally distributed, and so help mitigate the concern. In fact, we also estimated identical models with standard OLS and with weighted OLS (using sample weights) and all results are qualitatively identical. More details on these alternatives are available from us. The use of robust regression and its confirmation of results obtained by conventional estimates gives us considerable confidence in

the results we present here.

The other measures we include in our analyses represent the student's demographic characteristics, access to human capital, social capital, ethnicity and language background. Our measures of human capital come from a standardized scale of socioeconomic status of the respondent's family in 1980. The composite measure includes mother and father's education, family income, father's occupation and household possessions. We include the respondent's age as three categories: (1) age 14 and under in 1980, (2) age 15 or 16 in 1980 (reference group), and (3) age 17 or older in 1980. For those cases in which age is missing, we assign the average age (i.e. the 15 and 16 year old category) and include a dummy variable indicating that the age data were missing. We expect that recent immigrants who are older than average may have been held back from grade progression for different reasons than their U.S. born counterparts (i.e. limited English proficiency upon entrance into U.S. schools versus prior poor school performance).

Other measures in the models include family structure, number of siblings and the social capital available to the student. We construct a series of dummy variables for family structure: (1) respondent lives with both parents (reference group), (2) respondent lives with one parent and that parent's partner (may include a cohabiting partner or stepparent), (3) respondent lives with a single mother, (4) respondent lives with a single father, and (5) respondent lives with neither parent (most students in this category live with other relatives predominantly grandparents). Number of siblings is also represented by a series of dummy variables: (1) no siblings, (2) one or two siblings (reference group), and (3) three or more siblings (e.g. Vernez and Abrahamse, 1996)[1]. Our measures of social capital include two items. First, we include a dummy variable for whether or not parents monitor the whereabouts of the student. The second variable represents the number of parents who reportedly monitor the student's schoolwork (0, 1 or 2).

Table 1 presents the distribution of all measures for the entire sample as well as by generation status. Performance on the two academic tests differed significantly by generation. The 1980 mean score in the present sample was just about 50 points. Students in the recent immigrant group (arriving within the last six years, most likely while schooling was already

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1 Results with a continuous measure for number of siblings suggests that there is not a linear relationship with academic performance. Rather, the primary distinction appears to be between those students with 1 or 2 siblings and those with three or more.

underway) scored about 4.5 points below those of the third (and higher) generation. Immigrants arriving over six years before the survey (and most likely before first grade) scored about 1.5 points below the reference group, and second-generation students scored about the same. A one-way analysis of variance indicates that these differences are highly significant. Test scores in 1982 show modest improvement over those in 1980. The median score in 1982 was only .3 points higher than that in 1980. The small change in the median score over the two years masks considerable individual movement, which is related to the covariates we introduce. When a series of box plots of the distribution of 1980 test scores by generation status are compared, as in Figure 1, it is clear that there is a wider dispersion of initial test scores among recent immigrants.

[Figure 1 about here]

Overall, recent immigrants are a more heterogeneous group than any of the other three groups (pre-school immigrants, second-generation or third generation). Table 1 presents the characteristics of those in our sample on the variables of interest in our analysis. Differences across the generation status groups in such measures as socioeconomic background in 1980, a key measure of initial conditions, demonstrates how diverse these groups are. High School and Beyond classified (student's) background SES by an index created from a variety of traits. The index is designed to have a mean of zero (actually -0.02 in the subsample used here) and a standard deviation of one. Differences across generation groups in socioeconomic background are, as would be expected, highly significant. Recent immigrant students come from family backgrounds with SES levels about one-third standard deviation below those of the reference group. Pre-school immigrants, remarkably, show no difference in average background SES from the reference group, while the second generation's SES falls only slightly below. An examination of the box plots for SES (not shown) suggests, again, that both recent and pre-school immigrant students have a more heterogeneous family socioeconomic background than the higher order natives.

[Table 1 about here]

The family structure variables show only modest differences across generation groups. Overall, respondents are most likely to be living with both of their parents. The recent immigrants are more likely to live with a single mother or father than the other groups but are also less likely to be living with a single parent who has a partner (stepparent or cohabiting partner). Although the difference is small, we also observe that pre-school immigrants are more likely to be living in a household in which neither parent is present. Family size also differs only slightly across the generation status groups. Recent immigrants are less likely to be an only child. There is little variation by generation status in the number of parents who monitor the child's schoolwork, but recent immigrants are less likely to report that their parents closely monitor their whereabouts. This may be related to the lower likelihood of living with both parents in the household.

There has been much attention given to the role of English language ability and the language spoken in the home as possible predictors of school performance. There may be some selectivity issues with our sample since, at least among Hispanics, those who come from a non-English environment are less likely to enroll in school in the United States. However, dropout rates for those who do enroll appear to be fairly similar to other Hispanic students (U.S. Department of Education, 1997). We include measures of the home language environment: English only (reference), Bilingual and Non-English home. Recent immigrants are far more likely to come from a non-English home environment than students in the other generation groups are. Foreign-born students in general are more likely to report coming from a bilingual home with little variation by the duration of residence in the United States. The likelihood of coming from a bilingual background decreases for the second and later generations, a finding consistent with other regionally based samples (Rumbaut, 1998).

Multivariate Analysis

We first examine the effect of family background, generation and ethnicity on the initial measure of academic achievement in 1980 (sophomore year). Table 2 contains regression results predicting respondents' test scores in 1980 and then in 1982. These scores combine the vocabulary, reading and mathematics portions of the exams.

We first examine several models predicting the overall test scores in 1980. In Model 1, we include only the student's generation status, socioeconomic status, age and sex. Overall, recent immigrants (those in the United States for less than six years) perform less well on this test than any other group. Those arriving at least six years prior to the survey ("pre-school immigrants") and those from the second generation also do not perform as well as those students with U.S. born parents. These differences persist despite the presence of the other control variables. Notably, however, the effects of socioeconomic status (positive) and of being older than average (negative) are larger than the nativity variables (significant change in R square, F tests not shown). In other words, the student's family socioeconomic status and age provide a greater explanation for test score performance in 1980 than generation status. Student test scores are higher for those from families with higher socioeconomic status. Also, students who are old for their grade do significantly less well on the examination than those who are at age-for-grade parity or younger.

[Table 2 about here]

Model 2 adds the variables for family structure. Overall, students who live with both their parents are expected to score higher on the test than those who live with any other family members or single parents. Students who have neither parent present in their home in 1980 have the lowest test scores. Family size is also significant but only once the number of siblings reaches three or more. There are no significant differences in test scores for the students with zero, one or two siblings.

Differences across ethnic background are pronounced, as seen in Model 3. These ethnic effects emerge despite controls for generation status, socioeconomic status and family background. Most notable of these differences is the 5-point deficit in score seen in the performance of black students, net of SES and the other controls in the model. For students of Mexican and Puerto Rican origin the deficit is also significantly negative. Asian origin students and West Indian students score about three points higher on the test than blacks.[2]

A great advantage of utilizing the HSB data is the ability to parse the separate effects of

[2]Most such students receives codes of 1 for "black" and also 1 for "West Indian".

language background, ethnicity and nativity. Model 4 adds measures of social capital as well as the dominant language used in the students' homes. We include the student's report of how much supervision and school assistance they receive from their parents since these characteristics may mitigate the negative effects of disruption and mobility faced by recent immigrants. Parental supervision and parents' monitoring of schoolwork have positive effects on test performance in 1980. We also add measures for the languages most often spoken in the respondent's home. Those who report that a language other than English is predominantly spoken at home (and presumably favored by their parents) perform significantly less well than those whose language in the home is primarily English. However, those who report that English and another language are spoken at home score significantly better than those from either monolingual background. Taking together the change in the results from Models 2, 3 and 4, one can understand some of the compositional influences that bear on achievement across groups. Looking only at the 1980 starting point, one finds that recent immigrants (and to some degree pre-school immigrants) perform less well on a standardized tests when various elements of family background and ethnicity are also controlled. Furthermore the ethnic composition of the immigrant stream matters somewhat. The fact that effect of being a recent immigrant is more muted when ethnic characteristics are not present in the models, indicates that immigrant stream is not composed overwhelmingly of ethnic groups who perform less well on the standardized test.

The second set of regressions presented in Table 2 examine the trajectory in student test scores between 1980 and 1982. While our analysis does not include those students who never enroll in school, we do have data for those who dropout of school between 1980 and 1982. The HSB survey staff attempted to locate all respondents regardless of enrollment status at the 1982 follow-up. Successful administration of the standardized test was possible for most of the sample. Among the 11,708 respondents available for the present analysis — respondents who have nonzero sample weights in 1992 and thus were not lost to follow up — about 89% took the 1980 test and 87% have test scores available at both dates.[3]

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[3] Some 85% of the 14825 respondents (unweighted) in the 1980 wave took the standardized test. Of these 90% took the test again in 1982. Tests not presented here were performed to assess the composition of the non-

The models predicting 1982 test scores include the 1980 test score. We know that the best predictor of achievement in school is prior school performance (Farkas, 1996). And, indeed the 1980 test score strongly predicts 1982 test score. The question to be asked now is whether the *trajectory* of the student is predicted to shift on the basis of generation status and language background. Positive values on these coefficients would indicate "catching up" for those who were behind in 1980 (or pulling away for those who were ahead), while negative values would indicate falling behind the relative position established by the sophomore year score.

In the full sample, the value of the 1980 test score *alone* explains 76% of the variation in the 1982 score. In addition to providing strong evidence for the continuing of cognitive ability over the two-year period, the high correlation may also be seen as evidence of the reliability of the test. Whatever the standardized test measures, it manages to capture the same skills when repeatedly administered. In the multivariate regression results of Table 2 each additional point scored in 1980 predicts about eight tenths of a point in 1982. The variable is easily the most significant in the equation ($t=121$; $p<<0.001$).

Of some interest is that fact that SES persists to have an *independent* effect on 1982 test score. Even though SES was found to strongly predict 1980 score, it has additional predictive power beyond that which works through the earlier score. Although this is not a new finding, it does reaffirm the long-term importance of family socioeconomic background in later outcomes.[4] Here one finds that each unit of the SES index (approximately one standard deviation in family socioeconomic status) is associated with almost 0.7 units of change in the 1982 test ($t=9.0$); SES is the second most powerful regressor in the equation.

Other background variables are also important. Male students gain more on the test, net of other controls in the model. Students who were old for their grade in 1980 gain less than those who are progressing apace do. This is by far the largest coefficient in the model among the

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response. The Heckman technique, estimating a substantive model and a probit for the selection into the observation set were estimated and the results suggest that there is little useful information in the selection process that produces loss to follow up (LFTU) or missing data.

[4]Together SES and 1980 score predict 76.4% of the variation in 1982 score.

dichotomous traits and it is negative, suggesting that once behind in grade, students do not catch up with their younger peers. Parental presence holds no independent effect on the two-year test score change except for those students whom did not live with either parent in 1980. Living without either parent may also be capturing the effect of a turbulent and unstable home environment that continues to change over the two years and not just an effect of parent absence in 1980.

While nativity is not significant in the models for test score in 1982, some ethnic groups do appear to be on a trajectory that is significantly different from Non-Hispanic Whites. Black and Puerto Rican students perform less well on the 1980 test, and they also exhibit less improvement over the subsequent two years, even after controlling for family background. West Indian students see more improvement in their test scores than non-Hispanic Whites do. These differences in test performance over time are consistent with other studies of basic skill acquisition (Farkas, 1996).

Our measures of social capital do not have an additional effect on students' test trajectory beyond the initial effect on 1980 test scores. However, students who come from homes in which English and another language are spoken perform significantly better than those from either type of monolingual home do. In other words, students who come from a bilingual background demonstrate greater academic acceleration than others regardless of their nativity or ethnicity status do. Overall, the results predicting overall test scores in 1982 indicate that, while generation status has a significant effect on student's performance in 1980, there is no additionally detrimental effect associated with generation status by 1982. Ethnicity, family structure, age and socioeconomic status do contribute to the trajectory.

The HSB contains test score data for students who had dropped out of high school by 1982 as well as for those who persevered in school. Therefore, we included a second model predicting test scores in 1982 with an added variable for the respondents' dropout status. Those who dropped out of high school by 1982 saw their skill acquisition decrease over the two-year period. However, few of the other measures change significantly indicating that there are still substantial effects of socioeconomic status and race/ethnicity as well as age on academic achievement over time. The only measure that changes in significance between model 1 and

model 2 is living with neither parent in 1980. The effect of being older than average as a sophomore in 1980 (age 17 or over in 1980) does decrease when the drop-out variable is included but it remains significant and negative indicating that those who were older than average in 1980 continue to see their scores decline whether they remained in school by 1982 or not.

The robust regression results presented thus far have examined the effects of generation status and other background characteristics on the standardized test scores on three components. We were also concerned that the results we observe for generation status might be different if we examined the mathematics, reading and vocabulary test scores separately. We conducted additional robust regressions predicting each component of the combined test score: vocabulary, reading and mathematics. Table 3 reports the coefficients for generation status from the full models including all of the same covariates as those in Table 2 (model 4 for 1980 and model 1 for 1982). There are some differences in the effect of generation status on test score in 1980 depending on the type of test examined. Recent immigrants perform substantially worse on the reading and vocabulary tests while those who arrived in the United States before school age see their greatest deficit in vocabulary and mathematics. By 1982, however, once all covariates are entered in the models, there is no additional deficit in academic achievement by generation status.

[Table 3 about here]

We next turn to the possibility that there are differential trajectories in academic achievement for immigrants, the second generation and the third or higher generation depending on racial/ethnic group membership. There are too few cases of each ethnic subgroup for separate analyses by country-of-origin group. However, we can conduct separate analyses for the four largest panethnic groups in our sample and include additional variables for subgroup membership. These results are presented in Table 4. There are some differences in the performance of recent immigrants, pre-school immigrants and those from the second generation when examined separately by ethnicity.

[Table 4 about here]

Recent immigrants in the white subgroup have lower overall test scores in 1980 (combined math, vocabulary and reading) followed by those who arrived at younger ages in a pattern that would be predicted by a linear assimilation hypothesis. This basic pattern is also seen among Asians although the small sample size makes determining the significance of these variables difficult. In addition, the Asian group is quite diverse. Two dummy variables representing membership in the largest two Asian groups, Chinese and Filipino, are not statistically significant. They have opposite signs, however, suggesting there are very different patterns of test performance within the Asian category. Among Blacks, those from the second generation do not perform as well as their third or higher generation counterparts when controlling for ethnicity (West Indian vs. other). Students of West Indian origin perform substantially better on the 1980 test than other Black students. Recent Mexican immigrants do not score as well on the 1980 test while those in the second generation outperform third and higher generation Mexican origin respondents. In other words, recent immigrants appear to be at a disadvantage in initial basic skill acquisition but whether there is improvement among those in the second generation relative to those in the third generation varies by race and ethnicity.

The coefficients for all of the human capital, family background and social capital variables operate in the same way (direction and significance) for most of the groups. Specifically, older students perform less well regardless of ethnicity and those from a bilingual home tend to perform better. Most importantly, there is no additional effect of generation status on test scores in 1982, beyond its effect on 1980 test scores, for any of the four largest ethnic groups. Whatever differential adaptation pattern by generation was observed in 1980 for Blacks and Mexican-origin students, generation status does not further alter the 1980-82 trajectory. For all four groups examined, there is an additional effect of socioeconomic status and age on test performance by 1982.

The strong effects of age and immigrant status on test score in 1980 and the evidence presented in the literature of grade delays for recent immigrants suggests that the two factors may interact considerably. Indeed, when we examine our sample, 16% of recent immigrants were old for grade (17 or older in 1980) as opposed to only 4% of those from the third generation. In

order to determine if immigrants' academic trajectories vary by age in a different manner than those of their U.S. born counterparts, once background characteristics are controlled, we conduct an additional robust regression predicting test scores in 1980 and 1982 including interactions for generation status and age. The results are presented in Table 5. The first column on Table 4 presents the regression results for test scores in 1980. The results from this model demonstrate that recent immigrants who are old for grade, perform significantly better on both academic tests than other students who are also 17 years or older in 1980.

[Table 5 about here]

The second column in Table 4 presents the predicted trajectories of student performance on these standardized tests from 1980 to 1982 also including the interactions for age and generations status. Again, older than average students who are recent immigrants see their scores increase more than others in the same age categories even when other background characteristics are controlled.

We next use the results from the full regression models presented in Table 5 to demonstrate how the predicted test scores for 1980 and 1982 change when we take the differences by generation status on background characteristics and socioeconomic status into account. These are presented graphically in Figures 2 and 3. Figure 2 presents the predicted 1980 test scores for students who are of average age in 1980 (i.e. 15-16 years old). Recent immigrants are predicted to have a test score of 45.71 in 1980. There is little change in the predicted performance on the 1980 test score when we substitute the background characteristics for those in the 3rd or higher generations into this equation (45.93). In other words, if recent immigrants had the same family structures, ethnic composition and language backgrounds as those in the 3rd or higher generation, their test scores would change very little. However, when we substitute the higher socioeconomic status of the 3rd generation for the lower SES of recent immigrants, the recent immigrants' score does improve by nearly one point (46.87). There is still a substantial nativity gap in the 1980 test score. This is seen by comparing the predicted test score for recent immigrants assuming they have the same characteristics as those in the 3rd or

higher generations (46.87) to the score predicted for those in the 3rd or higher generation (51.32). Thus, even if recent immigrants had the same initial characteristics as those born in the United States to U.S. born parents, we would still see a difference in academic test performance (over 4 points).

[Figure 2 about here]

Figure 3 presents the predicted 1982 test scores for students who were of average age. Since the regression models control for previous test performance, we include a predicted test score for 1980 from Figure 2. For example, giving recent immigrants their own background characteristics and socioeconomic status yielded a predicted test score of 45.71 for 1980. Using this score in the 1982 models, recent immigrants have a predicted 1982 test score of 47.09. If recent immigrants had the same demographic and family background characteristics as those in the 3rd or higher generation and the 1980 test score based on those characteristics (45.93), their predicted 1982 test score would be 47.08. Likewise, assuming immigrants had the same socioeconomic characteristics as those in the 3rd or higher generation would raise the predicted 1982 test score for recent immigrants roughly one point (48.04) just as it did in 1980. Finally, if recent immigrants had the same socioeconomic status and background characteristics as those in the 3rd+ generation, their 1982 predicted test score jumps nearly 4 points but this score (51.86) is not very different from the predicted 1982 test score for those in the 3rd or higher generation (52.11). Thus, generation status itself has little influence on the 1982 test scores.

[Figure 3 about here]

The predicted test scores by generation status show a different pattern for students who were older than average in 1980 (i.e. 17 or older) and presumably faced some impediment to their academic progress somewhere in the past. Figure 4 presents the predicted test scores for these older students among recent immigrants and those in the 3rd or higher generation. The predicted scores are based on each group's own characteristics; no substitutions for background or socioeconomic characteristics were made. Recent immigrants have a predicted two-point

deficit in the 1980 test score compared to those in the 3rd or higher generation. However, even controlling for this lower initial performance, recent immigrants' scores in 1982 surpass those in the 3rd or higher generation. Thus, whatever impediments to grade progression recent immigrants experienced prior to 1980, their academic achievement trajectories are actually higher (and positive) when compared to similarly grade delayed U.S. born students.

Conclusion

These results for achievement in the 1980 sophomore year and the gain between sophomore and senior year tell us several things about the attainment process. Unadjusted data show that for the achievement test natives (in the third and higher-order generation) outscore the second generation, who outscore preschool immigrants, who outscore recent immigrants. Recent immigrants and those from non-English-speaking home environments (two groups with considerable overlap) start with a disadvantage. These two groups have lower SES backgrounds and 1980 test scores than pre-school immigrants. Thus, there are some different positions at the starting line.

Even upon controlling for family background, gender, family status, and ethnic group, we find that recent immigrants and those from non-English environments turn in inferior performances on the initial test — a couple of points on an average of 50 — than other key groups in this study. Ethnic background and family socioeconomic status (itself closely related to family structure) are strong predictors of 1980 test score. Ethnic effects can mask immigrant and language effects, but it is clear that they do not completely overlap; ethnic effects are distinct and often significant. These findings that ethnic minorities perform less well on academic tests in 1980 despite controls for generation status supports Waters (1997) suggestion that school performance declines among those immigrant children who face the most severe discrimination. Immigrant and second-generation adolescents' identificational assimilation appears to depend largely on the social context they encounter in the United States, including perceptions of discrimination (Rumbaut, 1994). While the 1980 test scores of non-Hispanic whites appears to follow what would be expected from a straight assimilation model, we do find different patterns when other ethnic groups are examined separately. Kao, Tienda and Schneider (1996) find

similar results for a more recent cohort of students. The academic trajectories of some minority students continues to decline over time indicating that there is a cumulative disadvantage for these groups, but our results suggest that this disadvantage is based more on ethnicity than generation status.

Generation status and language background are not significant in determining gain in achievement test score from 1980 to 1982, sophomore to senior year. The score on the standardized test in 1982 (first follow-up survey) is predicted strongly by the earlier test score and background SES (explained variance exceeds 75%). Thus, the 1980-82 *trajectory* in achievement differs little by immigrant status and language background, once other traits are controlled. This is consistent with previous research that finds the home language environment has little effect on student's academic achievement (Buriel and Cardoza, 1988). However, it may be that recent immigrants who have limited English proficiency are placed in lower grades than their U.S. born counterparts or immigrants who have been in the United States for a longer period of time. Consequently, while U.S. born students who are older on average may have a history of poor academic achievement, age may be a poor predictor of the academic achievement for recent immigrants.

Our analyses including interactions for age and generation status suggest that, when examined separately by age and in the presence of controls for SES and family background, recent immigrants' school performance converges with those of similar age for grade status. It is likely that recent immigrants find themselves placed in lower grades than would be expected given their ages for very different reasons than those immigrants who receive most of their schooling in the United States or natives born in the United States. Recent immigrants who are grade-delayed catch up with their peers of the same age. Controlling for background characteristics and previous test scores, there is very little difference in the academic achievement of students of the same age by generation status.

Generation status clearly differentiates student's academic achievement even when background characteristics are controlled. However, our results indicate that family socioeconomic status contributes more to explaining these differences in test scores. Foreign birth itself does not appear to impede academic achievement once students are in the U.S. school

system. The performance *trajectories* of the students in our sample are not influenced by generation status but are influenced by socioeconomic status, language background and ethnicity as well as age and family structure. This suggests that immigration itself does not lower the academic achievement of individuals but social barriers to academic achievement in the United States based on factors other than place of birth such as ethnicity may remain. These results also raise serious questions regarding the divergent paths of socioeconomically disadvantaged groups and historically disadvantaged racial/ethnic groups. Socioeconomic disadvantage contributes to an increasing gap in the acquisition of basic skills in childhood and into secondary school (Farkas, 1996). Policy aimed at reducing educational inequality in the United States is clearly better focused at reducing socioeconomic and racial/ethnic inequality than on the present political pressure to focus on immigration.

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Figure 1

Box Plots of Composite Test Scores in 1980 and 1982 by Generation Status

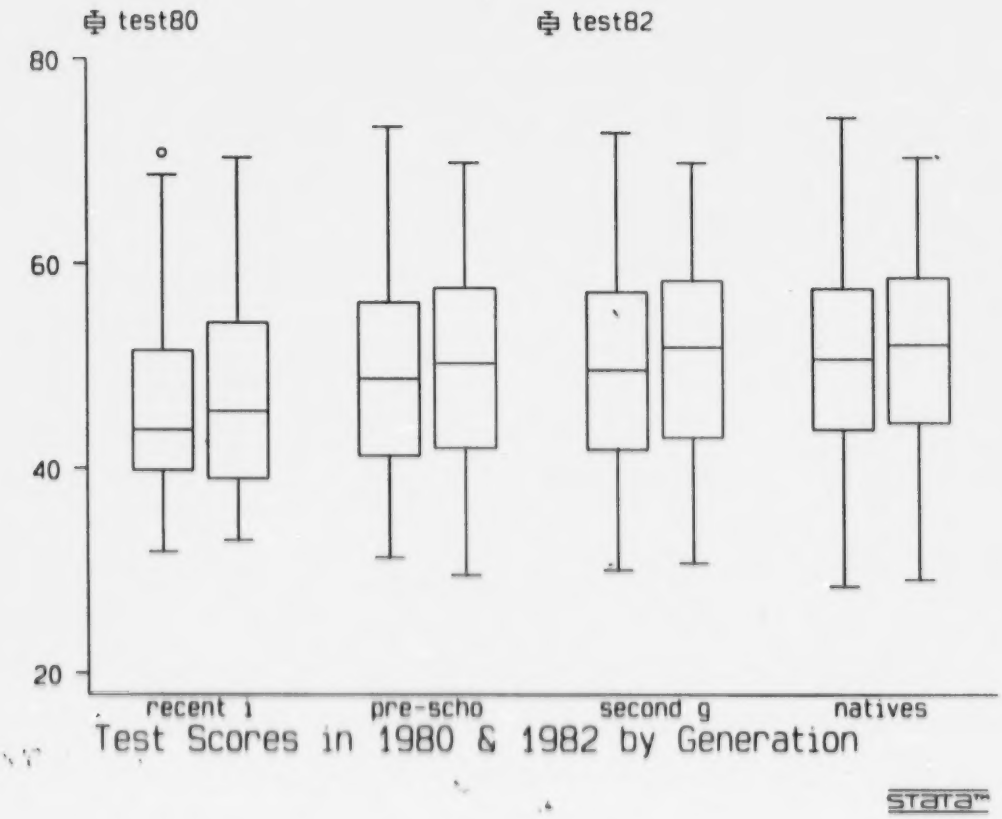

Table 1

Sample Characteristics for 1980 Respondents:
Entire Sample and by Generation Status
(weighted)

	Entire Sample	Recent Immigrants	Pre-School Immigrants	Second Generation	Third Generation
Test Scores:[1]					
1980	50.0	45.8	48.5	49.4	50.2
1982	50.5	46.6	48.8	50.0	50.6
Age in 1980:					
14 and Under	0.4%	3.1%	1.0%	0.5%	0.4%
15 or 16	94.4%	80.4%	93.4%	93.7%	94.6%
17 and Older	5.2%	16.5%	5.7%	5.9%	5.0%
Age Missing	6.2%	9.1%	10.1%	6.9%	5.8%
Male	43.3%	42.5%	38.9%	37.1%	44.2%
Female	56.7%	57.5%	61.1%	62.9%	55.8%
SES in 1980	-0.05	-0.29	-0.05	-0.08	-0.05
Family Structure					
Both Parents present	70.0%	70.8%	69.3%	66.7%	70.4%
Parent with Partner	8.9%	5.6%	7.2%	9.9%	8.9%
Single Mother	14.0%	16.2%	13.8%	16.5%	13.7%
Single Father	2.8%	3.7%	3.2%	2.5%	2.8%
No Parent present	4.3%	3.8%	6.5%	4.5%	4.2%
Family Size					
No siblings	4.2%	2.7%	3.4%	6.5%	4.0%
One or two siblings	34.0%	35.8%	34.1%	33.7%	34.0%
Three or more siblings	61.8%	61.5%	62.5%	59.8%	62.0%
Number of siblings missing	13.1%	21.0%	16.5%	14.8%	12.7%
Race/Ethnicity					
Black	13.0%	15.4%	14.6%	16.5%	12.5%
Asian	0.9%	24.1%	8.7%	2.0%	1.8%
Mexican	3.6%	11.7%	9.1%	7.6%	2.8%
Cuban	0.3%	0.5%	4.4%	0.9%	0.1%
Puerto Rican	1.0%	4.1%	5.3%	3.9%	0.5%
West Indian	0.4%	9.8%	2.3%	0.6%	0.3%
White/Other	80.8%	34.6%	55.7%	68.5%	82.1%
Social Capital					
Parents monitor whereabouts	85.3%	74.7%	83.6%	83.4%	85.7%
# Parents monitoring schoolwork	1.5	1.4	1.5	1.5	1.5
Language Background					
English only Home	87.5%	35.6%	53.5%	67.0%	91.8%
Bilingual Home	11.3%	42.4%	39.1%	28.4%	7.9%
Non-English Home	1.2%	22.0%	7.4%	4.6%	0.4%
Number of Cases:	10,209	170	574	1,295	8,170

Source: 1980 High School and Beyond: Sophomore Cohort

[1] Sample does not include cases missing test data for 1980 or 1982.

Table 2

Robust Regression Results Predicting Student's Test Scores in 1980 and 1982

	Models for 1980 Scores				Models for 1982 Scores	
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2
Generation Status (3rd + gen. = ref.)						
Recent Immigrant	-2.76 ***	-2.72 ***	-3.95 ***	-3.76 ***	0.15	-0.03
Pre-School Imm.	-0.93 **	-0.92 **	-0.97 **	-0.94 **	-0.08	-0.11
Second Generation	-0.33	-0.32	0.02	-0.01	0.08	0.09
SES in 1980	4.65 ***	4.43 ***	4.05 ***	3.96 ***	0.66 ***	0.61 ***
Age in 1980:						
14 and Under	2.08 *	2.28 *	2.68 **	2.74 **	0.64	0.67
17 and Older	-6.51 ***	-6.07 ***	-5.75 ***	-5.46 ***	-2.19 ***	-1.73 ***
Age missing	-6.26 ***	-4.96 ***	-4.27 ***	-3.97 ***	-1.04 ***	-0.91 ***
Male	1.14 ***	1.13 ***	1.04 ***	1.31 ***	0.54 ***	0.55 ***
Family Structure (both parents = ref.)						
Parent with Partner		-1.39 ***	-1.09 ***	-0.98 ***	-0.21	-0.09
Single Mother		-0.68 **	0.23	0.59 *	0.09	0.19
Single Father		-1.31 **	-1.18 **	-0.88 (a)	0.40 (a)	0.50 (a)
No Parent present		-4.17 ***	-3.24 ***	-2.92 ***	-0.55 **	-0.26
Family Size (1 or 2 sibs. = ref.)						
No Siblings		-0.68	-0.62	-0.56	-0.18	-0.16
Three or More Siblings		-1.43 ***	-1.30 ***	-1.22 ***	-0.11	-0.07
Number of siblings missing		-2.25 ***	-2.06 ***	-2.03 ***	-0.31 (a)	-0.27 (a)
Race/Ethnicity (White and others = ref.)						
Black			-4.87 ***	-4.77 ***	-0.34 **	-0.51 ***
Asian			2.92 ***	2.69 ***	0.16	0.10
Mexican			-1.86 ***	-2.16 ***	0.03	0.03
Cuban			-1.31 *	-1.41 *	0.06	0.03
Puerto Rican			-4.55 ***	-4.58 ***	-0.67 *	-0.81 ***
West Indian			4.10 ***	4.01 ***	1.05 *	1.18 **
Social Capital						
Parents aware of whereabouts				1.85 ***	0.54 ***	0.42 ***
#Parents monitor school work				0.36 **	0.12 (a)	0.04
Language Background						
Bilingual Home				0.74 **	0.39 **	0.36 **
Non-English Home				-1.71 ***	0.40	0.38
Test Score in 1980					0.86 ***	0.84 ***
Dropped out of High School by 1982						-1.81 ***
Constant	51.04 ***	52.54 ***	53.00 ***	50.60 ***	7.46 ***	8.62 ***
F	337.57	195.28	169.44	149.88	1580.07	1563.94

Source: 1980 High School and Beyond: Sophomore Cohort

(a) p<.10 * p< .05 ** p< .01 *** p< .001

Note: Sample does not include cases missing test data for 1980 or 1982

Table 3

Robust Regression Coefficients for Generation
in Models of Scores on Separate Test Components
in 1980 and 1982

	Reading Test		Vocabulary Test		Math Test	
	1980	1982	1980	1982	1980	1982
Generation Status (3rd + gen. = ref.)						
Recent Immigrant	-4.46 ***	-0.31	-5.71 ***	-0.77	-0.79	0.45
Pre-School Imm.	-0.40	-0.20	-1.31 **	-0.23	-1.24 **	0.03
Second Generation	0.19	0.02	0.12	0.26	-0.29	0.05

Source: 1980 High School and Beyond: Sophomore Cohort

(a) p<.10 * p< .05 ** p< .01 *** p< .001

Note: Sample does not include cases missing test data for 1980 or 1982.

Table 4

Robust Regression Predicting 1980 and 1982 Test Scores by Race/Ethnicity

	1980 Test Scores				1982 Test Scores			
	White/ Other	Black	Asian	Mexican	White/ Other	Black	Asian	Mexican
Generation Status (3rd + gen. = ref.)								
Recent Immigrant	-4.26 ***	-2.64	-3.62 (a)	-3.17 (a)	-0.96	1.00	1.14	0.15
Pre-School Imm.	-1.87 **	-2.34 **	0.36	1.57	-0.34	-0.03	0.18	-0.19
Second Generation	-0.07	-2.50 ***	0.88	2.28 ***	0.06	-0.51	0.58	0.28
Academic Test Score 1980					0.84 ***	0.90 ***	0.83 ***	0.91 ***
SES in 1980	4.35 ***	2.27 ***	4.39 ***	2.54 ***	0.74 ***	0.65 ***	0.58 (a)	0.65 **
Age in 1980:								
14 and Under	1.30	2.57	1.65	-0.03	0.18	1.62	0.02	2.97
17 and Older	-6.90 ***	-4.06 ***	-6.92 ***	-3.67 ***	-2.12 ***	-1.77 ***	-2.83 **	-2.64 ***
Age Missing	-5.22 ***	-1.00	-1.11	-3.23 *	-1.20 ***	-1.06 *	-2.30 (a)	-0.61
Male	1.12 ***	1.47 ***	1.68	2.24 ***	0.40 ***	0.67 **	0.93 (a)	0.68
Family Structure (both parents = ref.)								
Parent with Partner	-0.91 **	-0.47	-5.81 *	-0.66	-0.27	-0.25	-2.20 *	0.89
Single Mother	0.74 *	0.12	1.93	1.21	0.22	0.00	-1.30	0.16
Single Father	-1.03	-0.68	5.31	-1.15	0.31	0.97	1.17	0.17
No Parent present	-3.99 ***	-1.83 **	-5.44	0.71	-0.75 **	0.08	-0.85	-0.41
Family Size (1 or 2 sibs. = ref.)								
No Siblings	-0.54	-1.11	-0.19	2.30	0.05	-1.09 (a)	4.45 ***	-1.14
Three or More Siblings	-1.10 ***	-2.76 ***	-1.21	-1.01	-0.03	-0.40	0.85	-0.36
Number of siblings missing	-1.30 ***	-4.75 ***	-0.01	-3.22 *	-0.14	-0.39	1.96 *	-0.68
Social Capital								
Parents aware of whereabouts	1.81 ***	2.18 ***	-1.85	3.08 ***	0.43 ***	0.54 *	-0.59	1.02
#Parents monitor school work	0.42 **	0.03	0.60	0.48	0.10	0.16	-0.27	0.21
Language Background								
Bilingual Home	1.14 *	2.20 **	2.30	1.87 **	0.39 **	0.57	0.81	0.53
Non-English Home	-2.77 **	-3.73	-2.28	-0.12 ***	0.26	-0.08	-0.56	0.39
West Indian		6.54 ***				0.43		
Chinese			0.89				0.65	
Filipino			-2.15				0.04	
Constant	50.82 ***	46.47 ***	53.98 ***	43.66 ***	8.43 ***	5.21 ***	8.85 ***	4.31 ***
Number of Cases:	7,031	1,414	225	733	7,031	1,414	225	733
F	101.63	17.94	5.39	8.71	1313.47	229.45	58.36	132.99

Source: 1980 and 1982 High School and Beyond: Sophomore Cohort

(a) p<.10 * p< .05 ** p< .01 *** p< .001

Table 5

Robust Regression Predicting 1980 and 1982 Test Scores
with Interactions of Age and Generation Status

	Test Score in 1980	Test Score in 1982
Generation Status (3rd + gen. = ref.)		
Recent Immigrant	-4.46 ***	-0.26
Pre-School Imm.	-1.16 **	-0.21
Second Generation	-0.03	0.06
Academic Test Score 1980 [1]		0.86 ***
SES in 1980	3.96 ***	0.66 ***
Age in 1980:		
14 and Under	0.71	0.41
17 and Older	-5.81 ***	-2.48 ***
Age Missing	-3.95 ***	-1.02 ***
Male	1.31 ***	0.54 ***
Family Structure (both parents = ref.)		
Parent with Partner	0.97 **	-0.20
Single Mother	0.59 *	0.09
Single Father	-0.87 (a)	0.41 (a)
No Parent present	-2.89 ***	-0.54 **
Family Size (1 or 2 sibs. = ref.)		
No Siblings	-0.54	-0.16
Three or More Siblings	-1.21 ***	-0.12
Number of siblings missing	-2.05 ***	-0.32 *
Race/Ethnicity (Whites and others = ref.)		
Black	-4.75 ***	-0.34 **
Asian	2.64 ***	0.18
Mexican	-2.16 ***	0.03
Cuban	-1.41 *	0.07
Puerto Rican	-4.62 ***	-0.68 *
West Indian	4.00 ***	1.09 *
Social Capital		
Parents aware of whereabouts	1.84 ***	0.53 ***
#Parents monitor school work	0.36 **	0.12
Language Background		
Bilingual Home	0.75 **	0.39 **
Non-English Home	-1.78 ***	0.35
Interactions of Age and Generation Status:		
Young * Recent Immigrant	3.59	1.19
Young * Pre-School Immigrant	4.64	-0.26
Young * Second Generation	6.83 ***	1.03
Old * Recent Immigrant	3.53 *	2.26 **
Old * Pre-School Immigrant	2.35 (a)	1.82 **
Old * Second Generation	-0.13	0.23
Constant	50.64 ***	7.50 ***
F	121.36	1285.30

Source: 1980 and 1982 High School and Beyond: Sophomore Cohort
[1]

(a) p<.10 * p< .05 ** p< .01 *** p< .001

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Figure 2

Predicted 1980 Test Scores

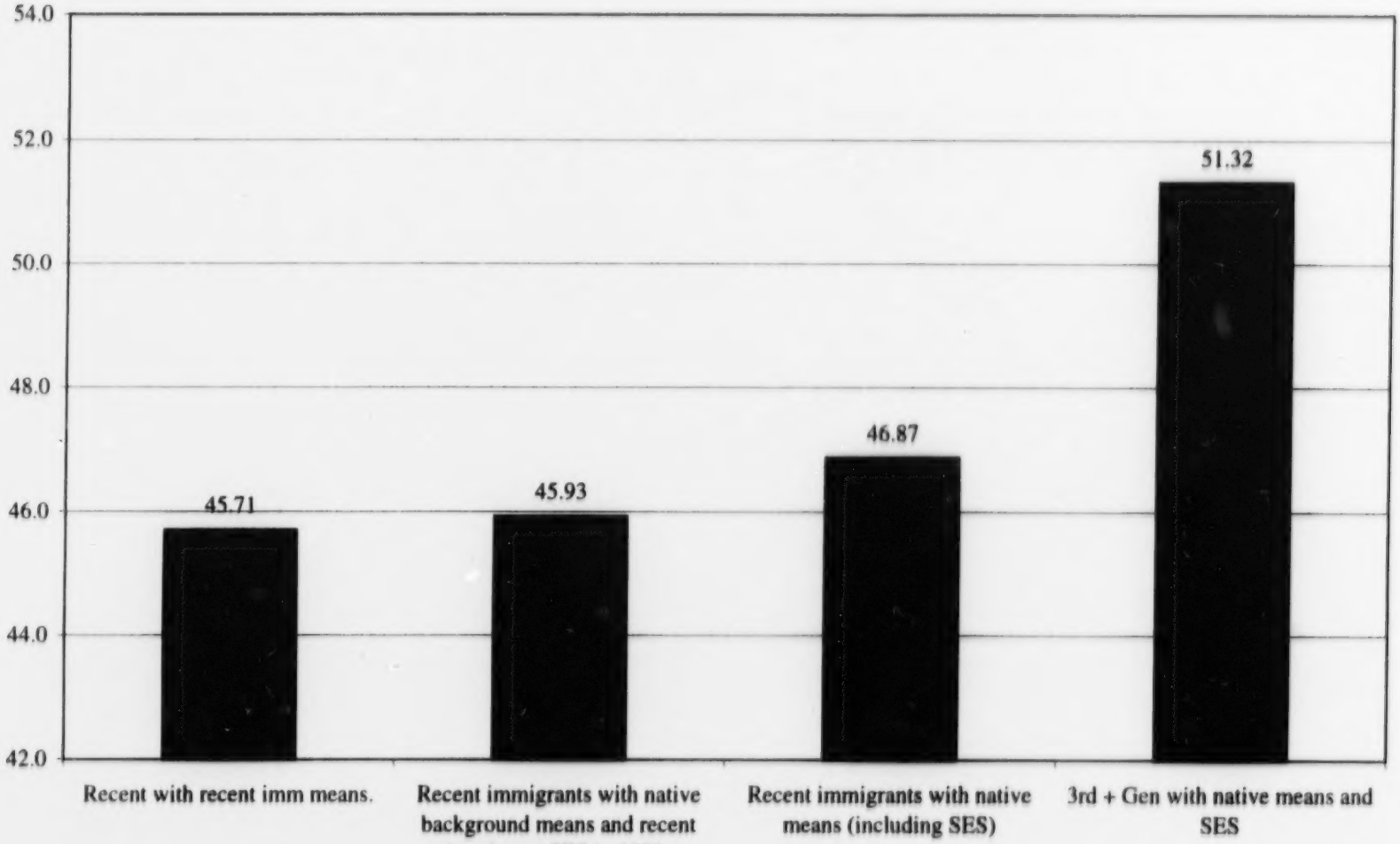


Figure 3

Predicted 1982 Test Scores

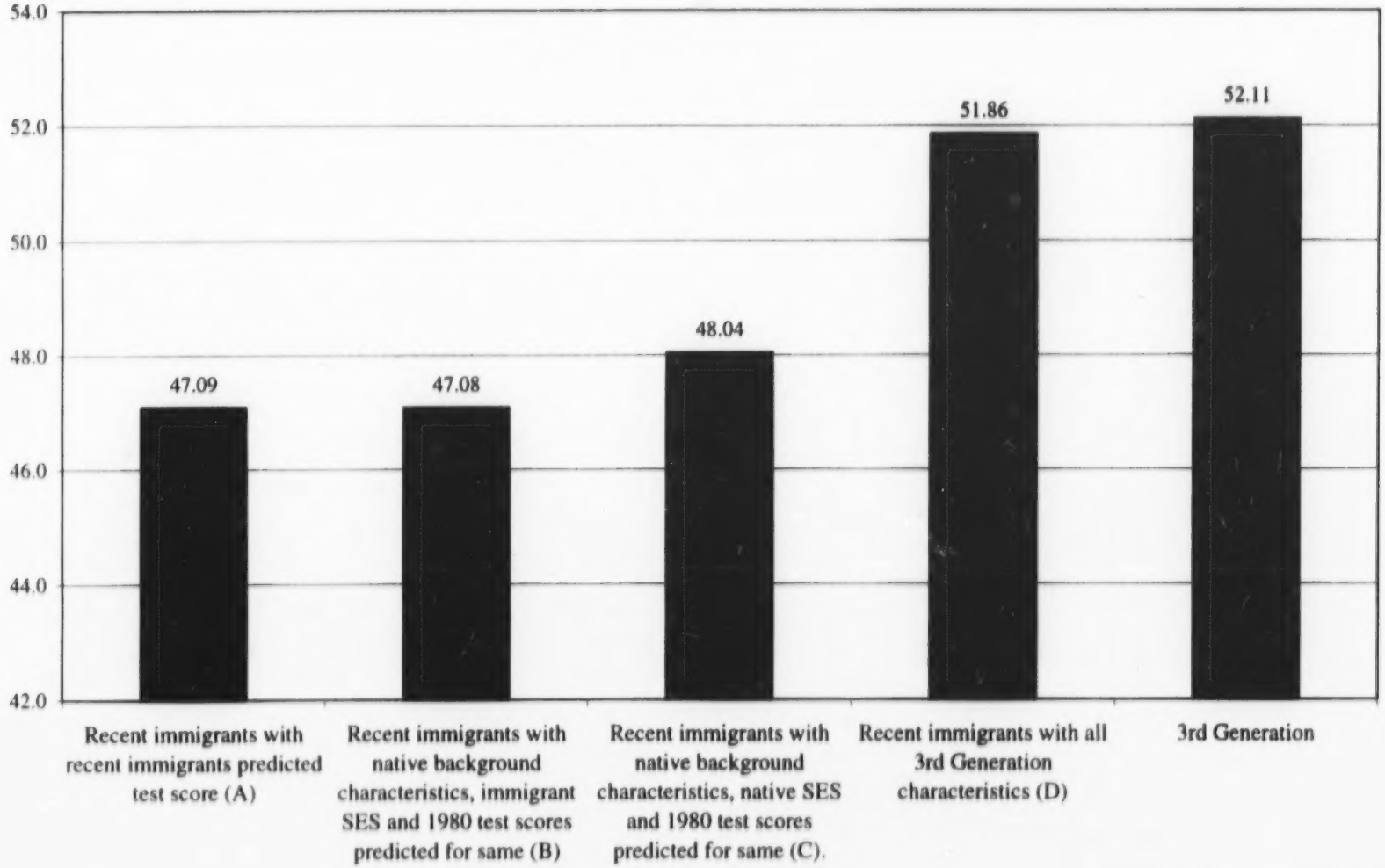
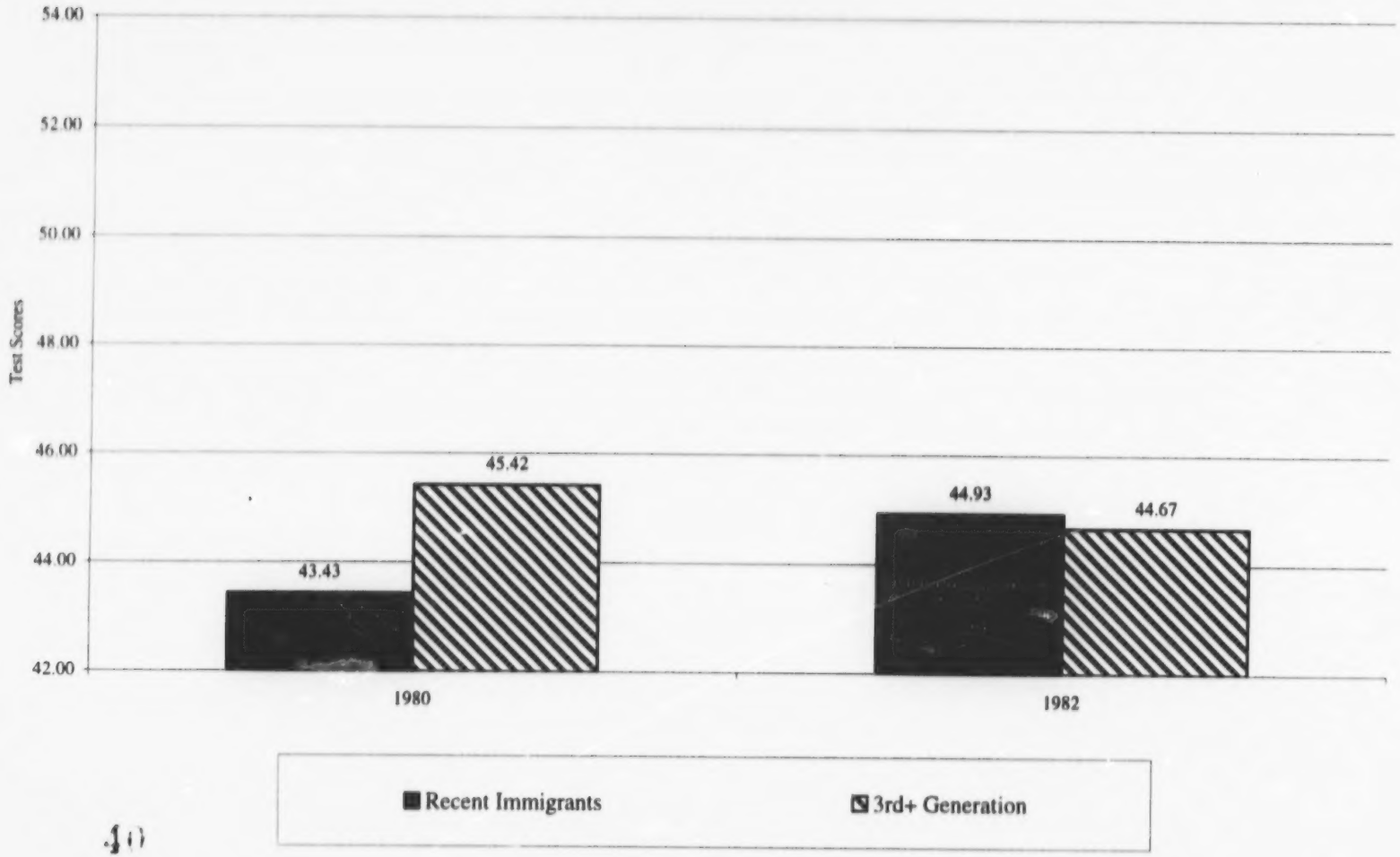


Figure 4

Predicted 1980 and 1982 Test Scores for Students 17 years or older (1980):
Recent Immigrants and 3rd+ Generation



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